

What is a virus?

DEOXYs

is a new Pokémon character in the Trading Card Game, and there is real world science behind its story.

For more real science visit:
<http://ksnn.larc.nasa.gov/pokemon>

PURPOSE

To simulate the spread of disease

BACKGROUND

Viruses and bacteria spread quickly — through air, contact, and water. Traveling from hand shake to hand shake, cough to cough, and shared drinking glasses, disease easily spreads. Tracking the paths of viruses and bacteria from their original sites is often difficult.

Historically, one of the most famous culprits in spreading disease was “typhoid Mary.” Born Mary Mallon in 1869, she was an Irish immigrant who earned her keep as a cook. Mary was known as quite an excellent cook, much to the misfortune of those for whom she worked. Unbeknownst to her employers, Mary carried the bacteria *Salmonella typhi*. By not washing her hands, she infected at least 30 people. It is believed that three of them died as a result of this contact.

Who might be “typhoid Mary” in the following activity?

PROCEDURE

1. You'll be given a small cup with a clear liquid. One cup is “contaminated” and will identify “typhoid Mary” for this activity.
2. “Share” your liquid with four friends in the class. To share, you'll pour your liquid into a friend's cup. Your friend will pour about $\frac{1}{2}$ of the liquid back into your cup. Do this step with three other friends. Keep track of the order of your “liquid sharing.”
3. An adult will test each sample with iodine. Iodine is an indicator that will test for “disease.” In truth, the iodine is an indicator for starch. If starch is present, the iodine will turn dark purple-black. If there is no starch, the iodine will not change color and will remain a dark brown-yellow.
4. If the liquid is NOT contaminated, the iodine will stay dark brown-yellow. If the liquid IS contaminated, the iodine will turn a dark purple-black.
5. Using deductive reasoning, determine who is “typhoid Mary.”

CONCLUSION

1. Who was typhoid Mary? How was “she” discovered?
2. How does this experiment simulate the spread of disease?
3. What might be done to stop or contain the spread of disease?

EXTENSIONS

1. Use what you've learned about how viruses and bacteria spread to create an awareness campaign for others. What might be done in your school, your home, and with your friends to stop the spread of disease?

MATERIALS

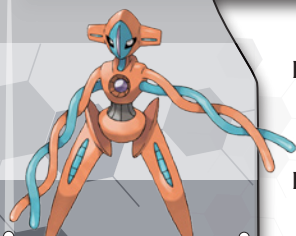
Prior to the activity, set up these materials for each student:

Small, clear plastic cup filled one-third with water

One cup will have a very small sample of liquid starch added (and should look like all other cups)

For the class:

Iodine and an eyedropper dispenser
— **Caution: Iodine will stain clothes and skin and should NOT BE INGESTED.**



LEARN
the real science behind
DEOXYs

POKÉMON
TRADING CARD GAME

